OH-293-20

145833

DATE: 5-17-82

TO: Ron St. John

FROM: Rene Van Someren

SUBJECT: Analytical Results for Chemical Recovery.

We have received the analytical results from your investigation of the subject site.

I have forwarded the data to _____ for further review.

Additional quality control information for sample E 0761.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: ~~4/29~~ 5/10/82

SUBJECT: Review of Region V Contractor Data; Received for Review on ~~4/27/82~~ 5/6/82

FROM: Curtis Ross, Director Chuck & Ilz for
Central Regional Laboratory

RECEIVED MAY 11 1982

TO: Data User: FIT Ron St. John F5-8104-05

We have reviewed the data for the following Case(s):

Site Name: Chemical Recovery SMD Case No: 628

EPA Data Set No: SF 513 Decision Unit:

CRL No's: 81MR01509

SMD Traffic No.'s: E0761

Contractor Lab: Meade Person-hours required for review: 2½

Following are our findings:

Acidic matrix spike and surrogate spikes average are low.

(X) Data are acceptable for use. y Flynn CRL 5/10/82

( ) Data are unacceptable for use.

( ) Data are preliminary - this case has been forwarded to Dr. Alfred Haeberer, EPA Support Services, for review - pending reply.

cc: Dr. Alfred Haeberer, EPA Support Services

EPA FORM 1320-6 (REV. 3-76)

Regional Review of Uncontrolled Hazardous Waste Site Contract

Laboratory Data Package

TO: U.S. Environmental Protection Agency
Sample Management Office
P.O. Box 818
Alexandria, Virginia 22313

The hardcopied (Laboratory Name) MEAD Compu Chem data package received at Region Five (5) has been reviewed and the quality assurance and performance data summarized. The data reviewed included:

CASE NO.	SAMPLE	VIAR Traffic Number	
628	81MR01569 SPIKE	E0761 E0764	

Contract No. 68-01-643 requires that specific analytical work be done and that associated reports be provided by the contractor to the Regions, EMSL-LV, and SMO. The general criteria used to determine the performance was based on examination of:

1. Data completeness
2. Spectra matching quality
3. Surrogate spike results
4. Matrix spike results
5. Duplicate analysis results
6. Blank analysis results
7. DFTPP and BFB performance

The results for each of the above groups are detailed within the body of this memo.

I. DATA COMPLETENESS

A. Organics analysis data sheets - ✓.

B. Base/neutral - sample chromatograms - ✓.

C. Acid-sample chromatograms - ✓.

D. VOA - sample chromatorgrams - ✓.

E. Pesticide - sample chromatograms - ✓.

F. Sample spectra - priority pollutants and non-priority pollutants - ✓.

G. Blank - Lab & Composite.

H. Duplicate analysis - one duplicate analysis of sample E0761 was reported as required by contract.

I. Spike data - ✓.

J. DFTPP criteria forms, spectra and listings - ✓.

K. BFB criteria forms, spectra and listings - ✓.

L. Base/neutral - standard reference spectra and chromatograms - ✓.

M. Acid-standard reference spectra and chromatograms - ✓.

N. VOA-standard reference spectra and chromatograms - ✓.

O. Pesticide-standard chromatogram - ✓.

P. Base/neutral sensitivity test - ✓

Q. Acid sensitivity test - ✓.

R. Tailing factor data - ✓.

II. SPECTRA MATCHING QUALITY

The spectra were examined and found to be of good matching quality. bk

The spectra were examined and found to be of poor matching quality due to:

Comments:

III. SURROGATE SPIKES

The recoveries of surrogate spikes for each parameter group and sample were evaluated. The average results for each parameter in a number of samples should be:

Fraction	Surrogate	Low Limit	High Limit	Average
Volatile	benzene-d_6	70	130	107
Volatile	toluene-d_8	70	130	119
Acid	phenol-d_5	30	100	3 **
Acid	2-fluorophenol	30	100	5 **
Base/Neutral	nitrobenzene-d_5	40	120	47
Base/Neutral	2-fluorobiphenyl	40	120	60

The average results were found to be:

IV. MATRIX SPIKE RESULTS

The Matrix Spike Results (MSR) for each parameter group were evaluated. The parameters that were reported are listed below along with the MSR guidelines and amount of spike added. A double asterisk (**) indicates outliers.

MATRIX SPIKE RESULTS

Fraction	Compound	Spike Added (ng)	Low Limit	High Limit	Actual	
Volatile	Chlorobenzene		60%	150%	120	
	Toluene		40%	190%	144	
	Benzene		70%	200%	150	
Base/neutral	1,2,4-trichlorobenzene		50%	200%	40	
	Acenaphtene		35%	200%	64	
	2,4-dinitrotoluene		25%	200%	54	
	Di-n-butylphthalate		50%	180%	64	
	Pyrene		50%	150%	68	
	N-nitrosodi-n-propylamine		20%	100%	65	
	1,4-dichlorobenzene		15%	200%	36	
Acid	Pentachlorophenol		40%	140%	66	
	Phenol		50%	200%	—	**
	2-chlorophenol		40%	150%	30	**
	p-chloro-m-cresol		40%	120%	32	**
	4-nitrophenol		40%	200%	—	**
Pesticide	Heptachlor		70%	150%	25	**
	Aldrin		80%	150%	26	**
	Dieldrin		85%	150%	36	**

V. DUPLICATE ANALYSIS RESULTS

The Relative Percent Difference (RPD) for each parameter group was evaluated.

The duplicate analysis RPD acceptance criteria should be:

Fraction	Maximum acceptable Percent Difference
Volatile	15%
Base/neutral	50%
Acid	40%

The RPD's exceeding the maximum acceptable percent difference were:

Fraction	Compound	Actual RPD
Volatile	Methylene Chloride	163
Base/neutral		
Acid	Pentafluorophenol	67

Each duplicate analysis was examined in reference to compounds detected in each analysis. Those compounds which were not common to each analysis for the duplicate sample are listed below.

Fraction	Sample No.	Compound	Concentration

VI. BLANK ANALYSIS RESULTS

The blank analysis was reviewed. The contaminants in the blank are listed below.

Fraction	Compound	Concentration

VII. DFTPP and BFB PERFORMANCE RESULTS

The DFTPP performance results were reviewed and found to be within the specified criteria.

The BFB performance results were reviewed and found to be within the specified criteria.

The DFTPP performance result(s) was/were reviewed and the following abundances were found to fall outside the specified criteria.

Compound	Contractor Designation	m/e	Required Abundance	Actual Abundance

The (BFB/DFTPP) _____ performance results which were found to be outside of the contractually required tuning requirements, do not have an adverse technical impact on the data.

VIII. Chromatography Checks

Tailing Factors

	Acceptance Windows	Actual
Benzidine	Less than 3	2.25
Pentachlorophenol	Less than 5	

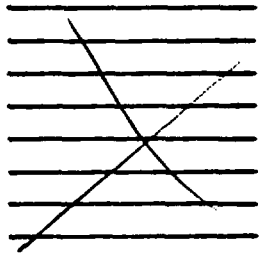
IX. Standards

General shape of the total ion chromatogram

	AC	B/N	VOA	Pest.
Peak Shape	OK	OK	OK	OK
Interferences				
Background				

Area Response

4-Nitrophenol
2,4-Dinitrophenol
Pentachlorophenol
Benzidine
Hexachlorocyclopentadien
Nitrobenzene
Isophorone
Dinitrotoluenes



Reviewere name: YVONNE FLYNN
FTS Telephone No.: 353-8370
Commercial Telephone No.:

OCT 3 0 1981

RECEIVED MAY 1 1 1982

3308 East Chapel Hill/Nelson Highway
P.O. Box 12652
Research Triangle Park, NC 27709

Telephone: 919-549-8263
800-334-8525

Mead CompuChem

October 28, 1981

U.S. Environmental Protection Agency
HWI/Sample Management Office
Post Office Box 818
Alexandria, Virginia 22313

Attention: Mr. W. Topping
Contracting Officer

Subject: Report of Data - EPA Contract 68-01-6432

Dear Mr. Topping:

Enclosed herewith are the results of analytical work performed in accordance with the referenced contract.

This report covers 1 sample received by Mead CompuChem on 09/18/81. This sample was identified as EPA Case Number 628.

If you have any questions regarding this package, please contact me at 800/334-8525 or 919/549-8263.

Sincerely,

Kevin McConnaghy
Government Market Manager

KM:pw

Enclosures: EPA Number E0761
CompuChem Number 8050

cc: Warren Arrington

RECEIVED MAY 1 1 1982

U.S. ENVIRONMENTAL PROTECTION AGENCY-HWI Sample Management Office
P.O. Box 818, Alexandria, VA 22313 - 703/683-0885

Sample Number
E0761

OCT 30 1991

ORGANICS ANALYSIS DATA SHEET - Page 1

Chemical Recovery
F5-8104-5

Laboratory Name Mead CompuChem Case Number C# 628

Lab Sample ID NO. 8050 QC Report No. 49-2,50-2,51-2

Signature of Person Authorized to Release Data: J. Wilmell

	ACID COMPOUNDS	(circle one) ug/ml ug/g
88-06-2	2,4,6-trichlorophenol	10U
59-50-7	p-chloro-m-cresol	20U
95-57-8	2-chlorophenol	10U
122-83-2	2,4-dichlorophenol	10U
105-67-9	2,4-dimethylphenol	10U
88-75-5	2-nitrophenol	10U
100-02-7	4-nitrophenol	90U
51-88-5	2,4-dinitrophenol	40U
534-52-1	4,6 dinitro-o-cresol	20U
87-86-5	pentachlorophenol	25U
108-95-2	phenol	10U

	BASE/NEUTRAL COMPOUNDS	
83-32-9	acenaphthene	10U
92-87-5	benzidine	25U
120-82-1	1,2,4-trichlorobenzene	10U
118-74-1	hexachlorobenzene	10U
67-72-1	hexachloroethane	10U
111-44-4	bis(2-chloroethyl)ether	10U
91-58-7	2-chloronaphthalene	10U
95-50-1	1,2-dichlorobenzene	10U
541-73-1	1,3-dichlorobenzene	10U
106-46-7	1,4-dichlorobenzene	10U
91-94-1	3,3'-dichlorobenzidine	10U
121-14-2	2,4-dinitrotoluene	10U
606-20-2	2,6-dinitrotoluene	10U
	1,2-diphenylhydrazine	10U
122-66-7	(as azobenzene)	10U
206-44-0	fluoranthene	10U
7005-72-3	4-chlorophenyl phenyl ether	10U
101-55-3	4-bromophenyl phenyl ether	10U
39638-32-9	bis-(2-chloroisopropyl)ether	10U
111-91-1	bis(2-chloroethoxy)methane	10U
87-68-3	hexachlorobutadiene	10U
77-47-4	hexachlorocyclopentadiene	10U
78-59-1	isophorone	10U
91-20-3	naphthalene	10U
98-95-3	nitrobenzene	10U
NA	N-nitrosodimethylamine	NA
86-30-6	N-nitrosodiphenylamine	10U
621-64-7	N-nitrosodi-n-propylamine	10U
117-81-7	bis(2-ethylhexyl)phthalate	10U
85-68-7	butyl benzyl phthalate	10U
84-74-2	di-n-butyl phthalate	10U
117-84-0	di-n-octyl phthalate	10U
84-66-2	diethyl phthalate	10U
131-11-3	dimethyl phthalate	10U
56-55-3	benzo(a)anthracene	10U
50-33-8	benzo(a)pyrene	10U
205-99-2	3,4-benzofluoranthene	25U
207-08-9	benzo(k)fluoranthene	10U
318-01-9	chrysene	10U
208-96-8	acenaphthylene	10U
120-12-7	anthracene	10U
181-24-2	benzo(ghi)perylene	25U
86-73-7	fluorene	10U
85-01-8	phenanthrene	25U
53-70-3	dibenzo(a,h)anthracene	25U
183-39-5	indeno(1,2,3-cd)pyrene	25U
129-00-0	pyrene	25U

ORGANICS ANALYSIS DATA SHEET-Page 2

Sample Number
E0761

Laboratory Name Mead CompuChem

Case Number 628

Lab Sample ID NO. 8050

QC Report No. 49-2, 50-2, 51-2

	VOLATILES	ug/ml or ug/g (Circle One)	
107-02-8	acrolein	10U	
107-13-1	acrylonitrile	10U	
71-43-2	benzene	1U	
56-23-5	carbon tetrachloride	1U	
108-90-7	chlorobenzene	1U	
107-06-2	1,2-dichloroethane	1U	
71-55-6	1,1,1-trichloroethane	4.7	
75-34-3	1,1-dichloroethane	1 I	
79-00-5	1,1,2-trichloroethane	1U	
79-34-5	1,1,2,2-tetrachloroethane	1U	
75-00-3	chloroethane	1U	
110-75-8	2-chloroethylvinyl ether	1U	
67-66-3	chloroform	1U	
75-35-4	1,1-dichloroethene	1U	
156-60-5	1,2-trans-dichloroethene	2.4	
78-87-5	1,2-dichloropropane	1U	
10061-0X-XX	1,3-dichloropropiene	1U	
100-41-4	ethylbenzene	17 A	
75-09-2	methylene chloride	58 A,C	
74-87-3	chloromethane	1U	
74-83-9	bromomethane	1U	
75-25-2	bromoform	1U	
75-27-4	dichlorobromomethane	1U	
75-69-4	trichlorofluoromethane	1U	
75-71-8	dichlorodifluoromethane	1U	
124-48-1	chlorodibromomethane	1U	
127-18-4	tetrachloroethylene	1.1	
108-88-3	toluene	1100 A	
79-01-6	trichloroethylene	4.9	
75-01-4	vinyl chloride	1U	

	PESTICIDES	ug/ml or ug/g (Circle One)
309-00-2	aldrin	0.1U
60-57-1	dieldrin	0.1U
57-74-9	chlordane	0.1U
50-29-3	4,4'-DDT	0.1U
72-55-9	4,4'-DDE	0.1U
72-54-8	4,4'-DDD	0.1U
115-29-7	endosulfan I	0.1U
115-29-7	endosulfan II	0.1U
1031-07-8	endosulfan sulfate	0.1U
78-20-8	endrin	0.1U
7421-43-4	endrin aldehyde	0.1U
76-44-8	heptachlor	0.1U
1024-57-3	heptachlor epoxide	0.1U
319-84-6	BHC-Alpha	0.1U
319-85-7	BHC-Beta	0.1U
319-86-8	BHC-Delta	0.1U
58-89-9	BHC-Gama	0.1U
53469-21-9	PCB-1242	0.1U
11097-69-7	PCB-1254	0.1U
11104-28-2	PCB-1221	0.1U
11141-16-5	PCB-1232	0.1U
12672-24-6	PCB-1248	0.1U
11096-82-5	PCB-1260	0.1U
12674-11-2	PCB-1016	0.1U
8001-35-2	toxaphene	0.4U

DIOXINS

1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	0.1U

*Less than 10 ug/l

(pesticides less than, 0.1 ug/l)

A. quantitated from secondary ion

I. EICP used for confirmation of hit.

Lab Name: Mead CompuChem Case No: 628

Lab Sample I.D. No. 5050

QC Report No: 49-2, 50-2, 51-2

Sample Number
E0761

A. SURROGATE SPIKE RESULTS

COMPOUND	Fraction	Conc (ug/l)	(Surrogates only) Spike Added (ug/l)	(Surrogates only) % Recovery
d_6-Benzene	VOA	11	10	110
d_8-Toluene	VOA	12	10	120
Fluorophenol	A	3	50	6
d_6-Phenol	A	2	50	4
Pentafluorophenol	A	7	50	14
d_5-Nitrobenzene	BN	33	50	66
Fluorobiphenyl	BN	32	50	64

Form 1 (continued) Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit however.

(a) Value - If the result is a value greater than or equal to the detection limit, report the value.

(b) U - Indicates compound was analyzed for but not detected. Report the minimum detection limit value with the U, e.g., 10U. The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum detection limit.

(c) K - If the mass spectral data indicate the presence of a compound that meets the identification criteria but the quantitative results is less than the specified detection limit but greater than zero, report the detection limit as K, e.g., 10K. The footnote should read: K- Actual value, within the limitations of this method, is less than the value given.

(d) J - Indicates as estimated value which is used when estimating a concentration for tentatively identified compounds, e.g., 1200J. The footnote should read: J - Estimated value.

(e) Other - Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described in a page attached to the data summary report.

(f) ** - This flag applies to pesticides parameters where the identification has been performed using two column confirmation (as specified in Method 608) but the level is too low for verification of the compound by mass spectrometry.

ORGANICS ANALYSIS DATA SHEET - Page 4

Lab Name: Mead CompuChem Case No. 628

Lab Sample I.D. No. 8050

QC Report No: 49-2,50-2,51-2

Sample Number
EO761

B. TENTATIVELY IDENTIFIED COMPOUNDS

	CAS #	COMPOUND NAME	FRAC-TION	% Pur.	Est. Conc.
1			BN		
2			BN		
3			BN		
4			BN		
5			BN		
6			BN		
7			BN		
8			BN		
9			BN		
10			BN		
11			ACID		
12			ACID		
13			ACID		
14			ACID		
15			ACID		
16			ACID		
17			ACID		
18			ACID		
19			ACID		
20			ACID		
21	75-56-9	Oxirane, Methyl (probably 2-propanone) AFX	VOA	89%	38 J
22	67-63-0	2-Propanol	VOA	85%	2.1 J
23	109-99-9	Furan, Tetrahydro	VOA	93%	6.5 J
24	105-31-7	1-Hexyn-3-OL	VOA	76%	139 J
25	78-92-2	2-Butanol	VOA	89%	7.7 J
26	108-10-1	2-Pentanone, 4-Methyl	VOA	96%	49 J
27	98-82-8	Benzene, (1-Methylethyl)	VOA	66%	1.29 J
28	108-38-3	Benzene, 1,3-Dimethyl	VOA	92%	61 J
29	108-38-3	Benzene, 1,3-Dimethyl	VOA	43%	45 J
30			VOA		

QUALITY CONTROL NOTICE

Low surrogate recoveries of more than one surrogate in a fraction have triggered the following actions:

- a check of the extraction worksheet to determine that the appropriate amount was added:
- a check of recoveries in other samples in the same set.

A repeat analysis is conducted if those checks do not account for low recoveries.

In the medium level acid fractions, surrogates typically have low recoveries. This can be documented from a number of duplicates and repeat analyses conducted on several EPA samples. This low recovery is likely due to the method's solvent system, 15% methylene chloride in hexanes. Independent experiments with similar samples and matrices demonstrate improved acid surrogate recoveries with 100% methylene chloride used for extraction.

Paul Mills
Quality Assurance Manager

QUALITY CONTROL NOTICE

The following data reporting qualifiers may be used in this report:

NDB = The concentration of a priority pollutant in the blank is greater than ½ the detection limit and is greater than ½ the concentration in the sample.

P = Suspected laboratory contaminant

O = Concentration in blank is less than or equal to one half the detection limit of the compound; the blank value is ignored.

C = The concentration in the blank is greater than ½ of the method detection limit and is less than or equal to ½ the concentration detected in a sample; the concentration in the blank is subtracted from the sample.

Paul Mills

Director, Quality Assurance

OCT 3 0 1981

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QUALITY CONTROL NOTICE

Internal standard area control charts have been included in this report as required by the contract. Areas outside the stated control limits have triggered an examination of internal standard area ratios (as reported on the Internal Standard Response Verification data sheet), the comparison of raw areas in the affected sample to the corresponding standard, and the comparison of the response factors obtained for the corresponding standard to the initial multipoint calibration data. Corrective action is necessary only if one or more of those checks are outside the established control limits. If no corrective action is noted on the internal standard area control chart, all other factors were within limits and action was not required.

Patty L. Ragsdale
Quality Control Manager